

Title (en)  
HYPERSPECTRAL, FLUORESCENCE, AND LASER MAPPING IMAGING WITH FIXED PATTERN NOISE CANCELLATION

Title (de)  
HYPERSPERKTRAL-, FLUORESZENZ- UND LASERKARTIERUNGSABBILDUNG MIT RAUSCHUNTERDRÜCKUNG MIT FESTEM MUSTER

Title (fr)  
IMAGERIE HYPERSPECTRALE, PAR FLUORESCENCE ET CARTOGRAPHIE LASER AVEC ANNULATION DE BRUIT DE MOTIF FIXE

Publication  
**EP 3987767 A4 20230531 (EN)**

Application  
**EP 20826403 A 20200605**

Priority

- US 201962864218 P 20190620
- US 202016735943 A 20200107
- US 2020036473 W 20200605

Abstract (en)  
[origin: WO2020256978A1] Hyperspectral, fluorescence, and laser mapping imaging with reduced fixed pattern noise is disclosed. A method includes actuating an emitter to emit a plurality of pulses of electromagnetic radiation and sensing reflected electromagnetic radiation resulting from the plurality of pulses of electromagnetic radiation with a pixel array of an image sensor. The method includes reducing fixed pattern noise in an exposure frame by subtracting a reference frame from the exposure frame. The method is such that at least a portion of the pulses of electromagnetic radiation emitted by the emitter comprises one or more of: electromagnetic radiation having a wavelength from about 513 nm to about 545 nm, from about 565 nm to about 585 nm, from about 900 nm to about 1000 nm, an excitation wavelength of electromagnetic radiation that causes a reagent to fluoresce, or a laser mapping pattern.

IPC 8 full level  
**H04N 25/67** (2023.01); **A61B 5/00** (2006.01); **G01J 1/10** (2006.01); **H04N 25/60** (2023.01); **H04N 25/63** (2023.01)

CPC (source: EP US)  
**A61B 1/043** (2013.01 - EP); **A61B 1/05** (2013.01 - EP); **A61B 1/063** (2013.01 - EP); **A61B 1/0638** (2013.01 - EP); **A61B 1/07** (2013.01 - EP); **G01J 3/2803** (2013.01 - EP); **G01J 3/2823** (2013.01 - US); **G01N 21/31** (2013.01 - EP); **G01N 21/6456** (2013.01 - EP); **G01S 7/483** (2013.01 - US); **G01S 17/46** (2013.01 - EP); **G01S 17/89** (2013.01 - EP US); **G06T 5/50** (2013.01 - EP); **G06T 7/0012** (2013.01 - EP); **H04N 5/33** (2013.01 - EP); **H04N 23/10** (2023.01 - EP); **H04N 23/11** (2023.01 - EP); **H04N 23/125** (2023.01 - EP); **H04N 23/54** (2023.01 - EP); **H04N 23/555** (2023.01 - EP); **H04N 23/56** (2023.01 - EP); **H04N 23/74** (2023.01 - EP); **H04N 25/585** (2023.01 - EP); **H04N 25/633** (2023.01 - EP); **H04N 25/674** (2023.01 - EP); **H04N 25/677** (2023.01 - EP); **G01J 2003/104** (2013.01 - EP); **G01J 2003/106** (2013.01 - EP); **G01J 2003/2826** (2013.01 - EP); **G01N 2021/178** (2013.01 - EP); **G06T 7/0012** (2013.01 - US); **G06T 2207/10024** (2013.01 - EP); **G06T 2207/10028** (2013.01 - EP); **G06T 2207/10064** (2013.01 - EP US); **G06T 2207/10068** (2013.01 - EP US); **G06T 2207/20212** (2013.01 - EP); **G06T 2207/30024** (2013.01 - US)

Citation (search report)

- [IY] US 2016157725 A1 20160609 - MUNOZ LUIS DANIEL [US]
- [XYI] HOLGER STEINER ET AL: "Design of an Active Multispectral SWIR Camera System for Skin Detection and Face Verification", JOURNAL OF SENSORS, vol. 2016, 1 January 2016 (2016-01-01), US, pages 1 - 16, XP055570013, ISSN: 1687-725X, DOI: 10.1155/2016/9682453
- [X] NGUYEN, L. K. AND MRGALITH, E: "Rapid calibrated high-resolution hyperspectral imaging using tunable laser source", PROCEEDINGS VOLUME 7319, NEXT-GENERATION SPECTROSCOPIC TECHNOLOGIES II, 28 April 2009 (2009-04-28), XP040496625
- See also references of WO 2020256978A1

Designated contracting state (EPC)  
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

DOCDB simple family (publication)  
**WO 2020256978 A1 20201224**; CN 113994661 A 20220128; EP 3987767 A1 20220427; EP 3987767 A4 20230531; US 11237270 B2 20220201; US 11821989 B2 20231121; US 2020400826 A1 20201224; US 2022107418 A1 20220407; US 2024094397 A1 20240321

DOCDB simple family (application)  
**US 2020036473 W 20200605**; CN 202080045284 A 20200605; EP 20826403 A 20200605; US 202016735943 A 20200107; US 202117553562 A 20211216; US 202318515116 A 20231120